

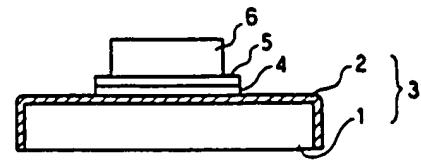
# BEST AVAILABLE COPY

**(54) SUBSTRATE FOR MOUNTING SEMICONDUCTOR ELEMENT**

(11) 62-24647 (A) (43) 2.2.1987 (19) JP  
(21) Appl. No. 61-107288 (22) 10.5.1986  
(71) SUMITOMO ELECTRIC IND LTD (72) AKIRA MATSUMURA(2)  
(51) Int. Cl. H01L23/12, H01L21/58, H01L23/06

**PURPOSE:** To obtain a substrate with superior electric insulation and heat-conductivity by forming a thin coating film of diamond on the surface of a metal substrate with superior heat-conductivity with PVD or CVD method.

**CONSTITUTION:** A substrate for mounting a semiconductor element 3 is formed with a metal plate 1 with superior heat-conductivity and a diamond coating layer 2 applied on the surface of the plate with PVD or CVD method. Then, a semiconductor element 6 is mounted through a metallizing layer 4 and an Au plating layer 5. The diamond coating layer 2 obtained with PVD and CVD method has smaller roughness of the surface and is superior in closely contacting with the substrate. When a semiconductor is mounted on the substrate, no gap is produced between the element and the substrate, thereby making it possible to increase the radiation of heat from the element.



257 / 702